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January 8, 1998

VIA HAND DELIVERY

Magalie Salas, Esq.
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20054

Re: MM Docket No. 97-217
File No. RM-9060
Comments of the University of Maryland System

Dear Ms. Salas:

Enclosed, on behalf of the University of Maryland and its constituent schools, is the original and three copies of the Comments of the University of Maryland System, in response to the Commission's Notice of Proposed Rulemaking in MM Docket No. 97-217.

If you have any questions regarding this matter, please contact me.

Very truly yours,

Paul Feldman

Paul J. Feldman
Counsel for
University of Maryland System

PJF/jr
Enclosures

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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Amendment of Parts 21 and 74	)	MM Docket No. 97-217
To Enable Multipoint Distribution	)	
Service and Instructional Fixed	)	File No. RM-9060
Television Fixed Service Licensees To	)	
Engage in Fixed Two-Way	)	
Transmissions	)	

COMMENTS OF THE UNIVERSITY OF MARYLAND SYSTEM

The University of Maryland, on its behalf and on behalf of its constituent schools, submits its comments in response to the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding.

I. Introduction

Constituent schools of the University of Maryland System operate extensive Instructional Television Fixed Service (ITFS) facilities. Those facilities are used primarily to transmit a full range of undergraduate, graduate, as well as professional development academic courses to students throughout the Washington/Baltimore metropolitan area, including Northern Virginia, Suburban Maryland, Annapolis, and Hagerstown, Maryland. These programs include over 100 university-level undergraduate and graduate courses and over 100 professional development courses offered each year. More than 3,000 students participate each year. The courses are transmitted "live" over television transmission facilities operating on ITFS frequencies.

Plans are under way to expand the number and diversity of programs to be transmitted by existing ITFS facilities and to expand those facilities in other geographic areas, where feasible. The University's constituent schools also have entered into agreements under which excess capacity in their ITFS facilities have been leased to be used for non-ITFS purposes. Thus, the University is interested in the Commission's proposals in this proceeding. Briefly, the University supports the Commission's objective in the proceeding -- which is understood to be to enhance the economic viability and competitiveness of wireless cable by authorizing the development of digital two-way communication services in the MDS and in the ITFS spectrum. However, the University believes strongly that this should be accomplished without degradating existing ITFS facilities and without compromising the role of ITFS as an educational service. Its comments on some of the specific proposals in the NPRM follow.[1]

II. Comments

A. Revised Definition of MDS

The University and its constituent schools support the Commission's proposal to change MDS and ITFS from essentially one-way, point-to-multipoint video transmission services to flexible services in which licensees and ITFS excess capacity lessees may offer either one-way or two-way services employing digital technologies and cellular system configuration. The Commission's specific proposals to accomplish that end,

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[1]Attached to these comments is the engineering statement of the University's consulting engineering firm, du Treil, Lundin & Rackley, Inc. ("the du Treil Statement"), which is incorporated as part of these comments.

such as the proposals to re-define "response stations," authorize "response hubs," expand the nature and purpose of "signal booster" stations, the proposal to permit "subchannelization" and "superchannelization" of the existing 6 MHz and the 125 KHz channels, as well as the proposal to adopt flexible technical standards, appear to be appropriate for the purpose and are, therefore, supported.

B. Interference

Unfortunately, however, it seems clear that adoption of the Commission's specific proposals would increase the potential for interference to existing ITFS facilities and, as pointed out in the attached du Treil Statement, would increase the scope and complexity of the calculations that would be required to conduct interference studies under the proposed new rules. Therefore it is important that the Commission make absolutely clear that existing ITFS facilities will continue to be protected from interference under the new environment, in any event. Also, the Commission should develop a reliable database for MDS/ITFS authorizations, and for pending applications, with the necessary data for the proper evaluation of interference under the new regime. Also, as the du Treil Statement suggests, the Commission must also develop an adequate, standard, software program to be used in the conduct of the more complex and extensive interference studies that would be necessary in the proposed new digital, cellularized, two-way environment. Further, the new rules should require that existing licensees and prior applicants be served not only with copies of applications for co- and for adjacent channel authorizations, but also with applications for non-adjacent channels for facilities within one mile from existing receive sites, so that they may be in

a position to evaluate the potential for the "brute force" interference, the serious potential problem discussed in the November 25, 1997, filing of the Catholic Television Network ("CTN"). See also the suggestion in the du Treil Statement concerning possible re-structure of Channel H4 for upstream transmissions in a more simplified two-way service.

C. Application Processing

The University would oppose the proposal of the Petitioners in RM-9060 for adoption of a "rolling", one-day filing window system to govern the filing of MDS/ITFS applications for response station hobs or for boosters. Such a procedure would create an undue burden on ITFS licensees who may be required to evaluate a continuing stream of applications. The University would also oppose the petitioner's proposal for automatic grant of applications against which no petitions to deny had been filed. That would be abdication of a basic Commission responsibility to issue licenses in the public interest. Instead, the University would support adoption of the Commission's proposals in Paragraph 52 of the NPRM, including the proposal for one-week initial filing window, an 120-day response period, as well as the proposal in Paragraph 53, whereby the staff would either grant or deny applications based on its determination on whether they comply with the Commission's rules and that the required protection from interference would be afforded to existing facilities.

D. Use of the 125 KHz Channels

As indicated above, the University would support the "sub-channelization" and "superchannelization" of the 125 KHz channels and their use for response as well as for

multipoint-to-point transmissions. However, the 125 KHz channels associated with 6 MHz ITFS channels should continue to be licensed to the respective ITFS licensees and their use for purposes other than for ITFS should be secondary to ITFS operations.

E. Issues Specific to ITFS

The University shares the Commission's belief that enhancing the competitive viability of wireless cable would also promote the underlying educational purpose of ITFS. However, the Commission must be mindful of the primary educational purpose of ITFS and should preserve it as primarily an educational service.

To maintain the ITFS as primarily an educational service (and not as a source for spectrum for wireless cable operations), the University recommends, first, that the requirement for a minimum use of 20 hours per week per channel for ITFS purposes and for a 20 additional hours recapture should be retained in the new rules. Secondly, as digital compression increases the number of channel paths, the number of channel paths retained for educational purposes should be increased proportionally. Therefore, the University agrees with those ITFS representatives who have argued that at least 25% of the channel paths of ITFS capacity in digital operations should be earmarked for the use of the ITFS licensee. Securing 25% of the paths for ITFS purposes would obviate the questions raised in Paragraph 69 of the Notice about what may count towards ITFS programming, how to count data and voice, use of booster stations, etc.

Shifting of ITFS programming onto other channels in a wireless cable system should be allowed but at the discretion of the ITFS licensee involved. This would not compromise the autonomy of ITFS licensees as long as they remain the licensees of

the channels assigned to them and continue to have overall control over their use. There should be no mandatory requirement that ITFS licensees shift their programming to other channels, for any reason, including the need to make possible the cellularization of the wireless system.

F. Other issues: autonomy of ITFS licensees; FCC role

The University is sympathetic to and shares some of the concerns expressed by ITFS representatives about such matters as the potential threat to engineering and financial autonomy of ITFS licensees under the proposed new cellularized, two-way regime, about their ability to continue or resume ITFS operation if the digital, cellularized two-way system in which they are involved is unsuccessful, about licensee control, and other such matters. However, the University believes that most of those issues can and should be addressed in the agreements between ITFS licensees and system operators. The Commission's role should be that of an overseer and protector of the public interest. In that connection, the Commission must reiterate its position, as clearly as possible, that the participation of any ITFS licensee in any two-way system would be voluntary, that no ITFS licensee would be required to change its facilities to accommodate the development of a two-way system, and that ITFS licensees must continue to have overall control over and the ultimate responsibility for the proper operation of the facilities licensed to them. The latter should include the responsibility to make arrangements in their excess capacity lease contracts to resume ITFS operations if the cellularized system in which they participate fails.

III. Conclusion

The University supports the Commission's goals in this proceeding. However, any rules the Commission decides to adopt to achieve those goals must not compromize the integrity of existing ITFS facilities or the ITFS service.

Respectfully submitted,

UNIVERSITY OF MARYLAND SYSTEM

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Date: January 8, 1998

ENGINEERING STATEMENT
IN SUPPORT OF COMMENTS IN MM DOCKET NO. 97-217
PREPARED FOR
UNIVERSITY OF MARYLAND

This engineering statement was prepared on behalf of the University of Maryland ("UM") in support of Comments in response to the *Notice of Proposed Rule Making ("NPRM"), In the Matter of Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees To Engage in Fixed Two-Way Transmissions,* MM Docket No. 97-217. The *NPRM* proposes a substantial revision of the MDS and ITFS Rules to permit wide-band two-way service and 'cellular-ization' of service by means of booster stations and response station hubs. The Commission extended the comment period in response to a November 25, 1997 pleading by the Catholic Television Network ("CTN") that suggested that there is the potential for interference to existing downconverters from non-adjacent response stations due to brute force receiver overload. CTN also proposes an alternative frequency plan that "partially refarms" the ITFS/MDS band.

UM is an ITFS operator in the Baltimore-Washington metropolitan area. The UM ITFS systems serves numerous classroom sites throughout its service area. In addition to its main facilities, UM utilizes relay and booster stations to feed its video programs to classroom receive sites.

UM recognizes the necessity for the MDS/ITFS to have the flexibility to evolve with the changing technology in order for it to remain viable in the competitive multichannel video/data marketplace. However, UM is concerned that the development of two-way services could further hinder its ability to expand and modify its conventional downstream analog ITFS system. For example, if A- and C-Group response stations/hubs and booster stations would sprout-up throughout its B-Group service area, it would have a significant interference analysis burden if it needed to modify its B-Group facility. Further, if it wanted to add receive sites where response stations have been established, it could be precluded due to interference. UM recently modified one of its C-Group relay stations to add a highly directional transmitting antenna to serve three additional receive sites. This modification required voluminous interference analyses in addition to negotiations with at least four entities for consent letters. Thus, it has become quite a burden just for UM to add a few receive sites and to try to do so on schedule for the school year. There is little doubt that the Commission proposal, about which the Commission itself has admitted its complexity, will add significantly to that burden.

UM requests that the Commission devote the necessary resources to develop a new database for MDS/ITFS that will include the necessary data to evaluate interference. The Commission has a relatively recently developed an ITFS Engineering Database. A similar database should be developed for the booster stations and response

station hubs. Several items that would be requirements for a complete interference analysis would include the response station hub antenna height above mean sea level and the minimum usable signal level. For booster stations, in addition to the normal technical details, the defined protected service area would need to be included. If that area is not a circle, it should be a contiguous area defined by a set of a maximum of 72 coordinate points that would be connected to define the area. The coordinates of the 72 or fewer points would be included in the database for booster stations. This database should be made available to the public in electronic form in the same way that the Mass Media AM, FM and TV broadcast databases are made available.

Additionally, because of the complexity of the calculations required to conduct an interference study under the new rules, we believe that the Commission would develop the necessary software to conduct interference analyses. UM requests that the software used by the Commission be made available to the public. This, coupled with the database availability in electronic form, will help to alleviate the burden placed on all ITFS operators in evaluating numerous booster and response proposals.

With respect to the service requirements, UM agrees with the Commission approach to serve all ITFS/MDS stations that may be affected. In light of CTN's comments concerning the potential for brute force interference, the Commission should consider a requirement for response station hubs to serve all non-adjacent ITFS stations with receive sites within 1-mile of (or within) the response

station service area. * This would aid in the correction of any interference problems that might occur due to brute force overload interference.

It is important for the Commission to recognize that because the interference from digital is characteristically noise-like, it becomes very difficult to determine the source of the interference. Furthermore, because of varying bandwidths and different coding schemes proposed, it would be impossible to identify the nature of the intelligence and identify the source when interference does occur. Coupled with the intermittent nature of the proposed response stations, UM can envision situations where its transmissions are being interfered with yet little hope of remedying the situation. UM has already experienced a number of interference situations that have proven very difficult and frustrating to identify even in the analog world. One involved an aircraft improperly using an adjacent frequency while airborne. Another intermittent interference problem has been occurring at one of its main relay station receive sites that has yet to be identified. The ITFS licensee needs all the possible tools that the Commission can provide to maintain the integrity of its ITFS system.

As a general matter, the Commission should consider whether there is a better alternative to the far-reaching reconfiguration of the entire MDS/ITFS band. For example, it is known that the Internet service proposed to

* This is an instance where it would be crucial to have the FCC ITFS database in electronic form so as to evaluate the service requirements.

be provided in the two-way configuration, consists of large amounts of downstream data with relatively small bursts of upstream data. That is why the upstream portion of Internet service can now be provided over telephone lines. If the Commission re-allocated the entire 4 MHz H4 channel to response stations, that might be sufficient for the two-way service proposed. Or considering the CTN proposal, the Commission might oversee the re-farming of the upper portion of the ITFS/MDS band to more efficiently utilize the spectrum for upstream service.

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December 30, 1997